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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/555,113	11/02/2006	Kazuyoshi Takeda	5426JS-3	2888
23442 7590 04/27/2009 SHERIDAN ROSS PC 1560 BROADWAY SUITE 1200 DENVER, CO 80202				
EXAMINER				
STAPLES, MARK				
ART UNIT		PAPER NUMBER		
1637				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/555,113

**Applicant(s)**

TAKEDA ET AL.

**Examiner**

MARK STAPLES

**Art Unit**

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-97 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-97 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/86)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-16, drawn to arrays of biosubstances.

Group II, claims 17 and 18, drawn to producing processes of arrays.

Group III, claims 19-25, 47-51, 67-70, and 95-97, drawn to genotype identification methods.

Group IV, claim(s) 26-46, 52-66, and 71-94, drawn to genotype analyzing and display systems, quantitative loci analyzing systems, and gene interaction analyzing systems.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons.

The technical feature linking Groups I-IV appears to be that they all relate to arrays of different kinds of biosubstances. However, Lockahart et al. (2000) teach arrays of different kinds of biosubstances being different gene biosubstances and different nucleic acid biosubstances which are DNA and RNA (entire article, especially the Abstract) of organisms (see 3<sup>rd</sup> sentence of the body of text).

Therefore, the technical feature linking the inventions of Groups I-IV does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

Accordingly, Groups I-IV are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

### ***Species Election***

2. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1. Groups I, III, and IV currently contains claims directed to species.

The species are as follows:

#### **GROUP I Product claims, arrays, claims 1-16**

A. Biosubstance (choose one of 1 or 2 then proceed to choose one ultimate subgroup)

1. Nucleic acid (claims 6, 12, and 18 each in part and claims 9 and 11)

a. DNA (claim 7)

i. genetic marker (claim 8 in part)

ii. genomic DNA (claim 8 in part)

iii. genomic DNA treated with a restriction enzyme (claim 8 in part  
and claim 10)

- iv. cDNA (claim 8 in part)
- v. EST (claim 8 in part)
- vi. synthetic oligoDNA (claim 8 in part)
- 2. Polypeptide (claims 6, 12, and 18 each in part and claim 14)
  - a. proteins (claim 12 in part)
    - i) kinase (claim 13 in part)
    - ii) receptors (claim 13 in part)
    - ii) proteins with SH3 region (claim 13 in part)
  - b. fragments of proteins (claim 12 in part)
  - c. oligopeptides (claim 12 in part)

GROUP III Methods, claims 19-25, 47-51, 67-70, and 95-97 (choose one of A or B then choose 1 or 2 under this)

A. Methods for hybrid organisms (claims 19-25, 47-51, 68, and 95)

- 1. Genotype identification method (claims 19-21, 47-48, and 68)
- 2. Screening methods for traits (claims 22-25, 49-51, and 95).

B. Variety improvement methods for organisms (claim 69-70 and 96-97).

- 1. Using Quantitative loci analyzing (claims 69-70).
- 2. Using Gene Interaction analyzing (claim 96-97).

GROUP IV. Products, claims 26-46, 52-66, and 71-94 (choose **one** of **A**, **B**, or **C** then proceed as indicated)

**A. Genotype analyzing and display system (claims 26-46)**

1. Input and output means (claim 37) choose one each

of Input and Output means

a) Input means (claim 37 in part) choose one input means

i. comprehensive expression level gene information on hybrid  
individuals (claim 38 in part)

ii. genetic information of parents (claim 38 in part)

iii. Manual Input means provided as **the** input means (claim 41  
in part)

a. comprehensive expression level gene information on  
hybrid individuals (claim 41 in part)

b. genetic information of parents (claim 41 in part)

c. genetic map constructing information (claim 41 in part)

b. Output means (claim 42 in part) choose one output means

i. display an image on screen (claim 42 in part)

ii. print an analysis result (claim 42 in part)

**B. Quantitative loci analyzing systems (claims 51-66)**

1. Input and Output means (claims 59 and 64 each in part) choose one each  
of Input and Output means

- a) Input means (claim 59 in part) choose one Input means
  - i. genetic marker information (claim 60 in part and claim 62 in part)
    - a. genetic map (claim 61 in part)
    - b. genetic map constructing information (claim 61 in part)
  - ii. phenotypic value (claim 60 in part)
    - a. genetic map (claim 61 in part)
    - b. genetic map constructing information (claim 61 in part)
  - v. genetic map constructing information (claim 62 in part)
  - vi. Manual Input means (claim 62 in part)
    - a. genetic marker information (claim 62 in part)
    - b. phenotypic value (claim 62 in part)
- b. Output means (claim 63 in part) choose one output means
  - i. display an image on screen (claim 63 in part)
  - ii. print an analysis result (claim 63 in part)

**C. Gene Interacting analyzing systems, claims 71-94**

1. Input and Output means (claim 86 in part) choose one each  
of Input and Output means

- a) Input means (claim 86 in part) choose one Input means
  - i. genetic marker information (claim 87 in part)
    - a. genetic map (claim 88 in part)
    - b. genetic map constructing information (claim 88 in part)

- ii. phenotypic value (claim 87 in part)
  - a. genetic map (claim 88 in part)
  - b. genetic map constructing information (claim 88 in part)
- iii. expression profile information (claim 87 in part)
  - a. genetic map (claim 88 in part)
  - b. genetic map constructing information (claim 88 in part)
- iv. Manual Input means (claim 91 in part)
  - a. comprehensive gene presence information (claim 91 in part)
  - b. genetic marker information (claim 91 in part)
  - c. genetic map constructing (claim 91 in part)
- b. Output means (claim 92 in part) also choose one Output means
  - i. display an image on screen (claim 92 in part)
  - ii. print an analysis result (claim 92 in part)

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include



all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

3. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention or species.

Should applicant traverse on the ground that the inventions have unity of invention (37 CFR 1.475(a)), applicant must provide reasons in support thereof. Applicant may submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. Where such evidence or admission is provided by applicant, if the examiner finds one of

the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

**Close**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Staples whose telephone number is (571) 272-9053. The examiner can normally be reached on Monday through Thursday, 9:00 a.m. to 7:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Staples/  
Examiner  
Art Unit 1637  
April 26, 2009